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ABSTRACT

In view of financial constraints, large numbers of students to be educated, and rapid changes in information and communication and information technology, open learning (OL) and distance education (DE) systems are being established at an unprecedented rate in almost all developing countries of the Asian and Pacific region. Modern communications, computer-aided programs, and DE and OL systems should be applied vigorously to four areas: reduction of poverty, especially among rural populations; enlargement of human development in all aspects of physical, intellectual, and spiritual areas; improvement of women's status; and contribution to national peace and elimination of violence and terrorism. DE and OL help improve the quality of information and reduce the information gap. The core strength of DE is that it can globalize the education system by bringing in the best available teachers and experts to any corner of the world to provide the latest information with the help of communication technology. DE is a philosophy that translates media into resources to give the right of learning to every learner during student, working, and retirement life. Some issues remain to be addressed in DE and OL: the shift toward small facilities and more software; management capacity, production, and delivery; quality of materials; too generalized programs; dependence on government subsidies; ineffective monitoring and evaluation; and lack of private sector and community involvement. (YLB)

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COMMUNICATIONS TECHNOLOGIES IN OPEN AND DISTANCE LEARNING IN ASIA: THE EXPERIENCE OF THE ASIAN DEVELOPMENT BANK

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I. INTRODUCTION: TODAY'S SCENARIO

1. The Asian and Pacific region is home to about 3 billion people, comprising over one half of the earth's population of 5.63 billion (1994). The average annual population growth rates range from a low of 0.5 percent in Western Samoa to a high of 3.1 percent in Pakistan. Not only is Asia the world's fastest growing economic region, but it is also the seat of the great paradox of ancient culture beside modern technology. It is the bedrock of venerable civilizations, strong family values, and spiritual endeavors, and of community-based living. India and the Peoples' Republic of China (PRC) have educational systems that go back many centuries, beginning with the training of priests and acolytes. In the realm of communications, trained birds were used in the olden times. Peace treaties between kingdoms, recorded on simple parchments made from tree bark or animal were sent across mountains and rivers by specially gifted young runners who could travel by horse as well. Slates were also used to communicate messages from one ruler to another. To this day, chalk and blackboard remain important communications media in classrooms across rural areas.

2. At the present time, Asia is at a crossroads. Children up to 14 years make up almost 35-40 percent of Asian countries' populations, indicating huge pools of dependent human beings. A shift towards urbanization is also detectable, and Asia's cities are projected to be the world's biggest megacities by 2000. Asia is emerging from a rich and glorious past in which the western world would hungrily send its ambassadors and scholars to learn of eastern culture, philosophy, science, and invention. But today, most of Asia's populations are confronted with massive problems of development such as illiteracy, malnutrition, ill health, environmental degradation, population explosion, deprivation of women's rights, hunger, and all sorts of socioeconomic and political conflicts and tensions. Asia also suffers from lack of full participation by the citizenry in their governments. Despite tremendous efforts, policy/program changes, and revitalized systems of governance and management, the solutions are not in sight. The numbers of the deprived and disadvantaged are increasing, especially among females in rural areas.

3. To address the issues related to the education sector, in the past three decades, Asian governments, using their own resources and with the help of external assistance, have made serious efforts to strengthen educational services across all levels and sectors. As a result, the educational budgets and expenditures have grown considerably. Accessibility to education has increased tremendously, including that for female students in rural areas. Teacher training and curriculum reforms, including textbook and instructional materials upgrading, have been implemented. National education policies are taking shape. Literacy, participation, and completion rates have improved. Good management practices, management information systems, and better trained staff have become widespread.

4. The harsh reality is that problems and enigmas abound. The population estimated to be in the state of poverty ranges from a low of 29 percent in Pakistan to highs of 86 percent

in Bangladesh and 90 percent in Bhutan. Furthermore, the female population remains low in active participation and in benefitting from development. In industry, agriculture, and the services sector females comprise the lower portion of the total active working population. Overall literacy rates are low: 38 percent in Nepal to 47 percent in Bangladesh and Pakistan; but women are worse off: only 21-22 percent in Bangladesh and Pakistan. Gross enrollment rates are likewise erratic: from only 19 percent for females and 31 percent for males in Bhutan, to a very high 125 percent for males and 116 for females in the PRC. In health, the ratios of persons per hospital bed and per physician, and per capita protein and calorie supplies, vary across the region, but the inadequacies remain severe. Environmental problems, including peoples' access to safe water and sanitation, are also growing in intensity because of population increases. Overall, growth rates of real gross domestic product barely exceed population growth rates. Education, virtually all agree, should be the redeeming factor for overcoming these problems. Despite its gains however, education is formal in its system and structure, benefitting chiefly the elite sector or urban societies, to the detriment of the poor and disadvantaged, especially of females in the rural areas.

5. All socioeconomic sectors compete for scarce financial resources. Even aid agencies are being pressured by new nations and societies emerging from the old regimes. Such competition further justifies use of these new media and technologies but with a purposeful change for strategy — not always coming out with huge infrastructure projects and capital-intensive investments. Education therefore cannot be treated as independent of other sectors or in isolation in the basic services domain. It must be considered integral and part of the total basic services, including health, water supply, sanitation, and rural development. There should be an integrated approach to optimize use of these investments. Mobilization of external resources is becoming difficult. Other countries and beneficiaries are growing in number and need for scarce international assistance and technical aid. It is crucial that self-reliant mobilization be improved. This will take more private volunteers and community participation in everyday school affairs — from donating land and building classrooms, to mobilizing teachers from the community, to fund raising, and even to teacher monitoring and evaluation to ensure cost-effective practices. New types of community leaders and volunteers, and reoriented school heads have to be brought together to invigorate community involvement.

II. MODERN COMMUNICATIONS/MEDIA

6. It is in this environment of changing complexities, where modern communications and electronic media are expanding in Asia at a rate unprecedented in global history, that billions of dollars are being invested in developing infrastructure for viewing and listening capacities. While governments and business are expanding radio/TV networks, satellite broadcast facilities, and production capacities, individuals and communities are making their own decisions about investing in various receiving devices. With the increasing number of new TV channels through introduction of digital compression, which can expand existing networks up to ten times their capacity, the potential will be tremendous and will grow geometrically. The potential audiences are much bigger today than a decade ago.

7. In view of the financial constraints, large numbers to be educated and trained, and rapid changes in knowledge and information, as well as in communication and information technology, open learning (OL) and distance education (DE) systems are being established at an unprecedented rate in almost all developing countries of the Asian and Pacific region. This

trend will continue to grow as demand for education and training accelerates with economic changes and with advances in information and communication technology. Many national and international broadcasting channels such as BBC, CNN, and Doordreshan, as well as new channels such as Sony, Star TV, and Zee TV, have already started broadcasting educational programs for different target groups across the region. By the time we enter the 21st century, there will already be a strong foundation for education and training using communication technology. This scenario is an encouraging development.

8. Challenges confronting these issues are formidable. In my perception, the application of modern communications, computer-aided programs, and DE and OL systems should be applied vigorously to four areas: (i) reduction of poverty, especially among rural populations; (ii) enlargement of human development in all aspects of physical, intellectual, and spiritual areas, including psychomotor, affective, and cognitive skills; (iii) improvement of the status of women; and (iv) contribution to national peace and elimination of violence, terrorism, and lawlessness.

9. Poverty reduction should be the main goal of development, for in the grip of poverty the disadvantaged and marginal groups of society are driven away from all potential opportunities for personal growth, family enrichment, and community participation. Poverty eliminates choice and decision making among the poor. It deprives them of inspiration and motivation to join the mainstream of the community, and to become productive, just, and responsible citizens.

10. The urgency of the universalization of primary education is another challenge. Human development, empirical studies demonstrate, is the prime growth factor for all socioeconomic and technological development. It is behind the economic miracles of Hong Kong; Japan; Republic of Korea; Taipei, China; and Singapore. Asia must attain universal primary education within the decade to sustain its momentum of development. But mere provision of schools does not ensure attendance because of sociocultural constraints. Schools may be in place, but there are large numbers of disadvantaged and marginal groups unable to take full advantage of these resources. Psychosocial and cultural barriers, especially as they affect women, need to be reduced. Formal schooling — which operates on fixed schedules, rigid hours, lockstep curricula and programs, admissions criteria, and relatively cost-heavy factors — is one answer, but not a cost-effective answer for the disadvantaged, the rural poor, and marginalized groups. Alternative systems like nonformal education, DE, and OL systems are the new strategies. The quality of the classroom environment also has to be improved. The mix of teacher, textbooks and instructional materials, teaching/learning processes, and management capability has to blend well with the physical campus and classrooms to produce high-achieving students. The problem is not only inadequate facilities, but also the inefficient utilization of facilities. Primary school buildings are used on average for only 2 hours a day on an annual basis.

11. Regarding the issue of women's upliftment, access is basically a psychosocial and cultural problem, not merely one of inadequate funds or classroom facilities. Parents and communities need more orientation on the values and uses of education, and more female teachers have to be mobilized for the early primary grades. It is to be noted that the worst wastage, leaks, and dropouts occur between grades 1 and 2, where in many developing countries, male teachers still dominate the classrooms. In grades 1 and 2, female teachers, in

my viewpoint, are more effective and acceptable to the pupils, parents, and community. Women are the most disadvantaged group in many Asian countries in terms of education, nutrition, and participation in the labor force, as well as participation in governance. In most developing countries, women comprise up to 50 percent of the total population — therefore the logic is that any movement to raise literacy and participation rates must be directed at the female populace. Not only do they demonstrate high capability levels, but the long-term benefits are enormous. Women are the first to ensure that their children will be enrolled in schools, and they demonstrate great potential for promoting family planning, health and nutrition habits, and possible livelihood trades to contribute to family income.

12. Global violence, terrorism, and peace-threatening incidents are marshaling events in the wrong direction in most governments. Budgets for military defense are slicing away much-needed funds for education and human development, gross domestic savings, and capital formation, increasing resource gaps. In view of this, it is obvious that peace education will be more important in the decades ahead to reduce military expenditures and move towards the so-called peace dividends.

III. RATIONALE FOR EXPLOITING MEDIA AND THE INCREASED ROLES OF DISTANCE EDUCATION AND OPEN LEARNING SYSTEMS

13. Why is there need to bring in electronic media and DE? The major challenge is to serve the poor, who have not been able to take advantage of existing educational services. They are growing in numbers geometrically every day. By focusing on the poor, we serve 60-70 percent of the people in the Asian and Pacific region. Of Asia's 3 billion people, this means from 1.8 to 2.1 billion human beings. If we can provide educational services to these people, we can make dramatic improvements in their lives. Small educational doses, at low cost, and productive delivery systems will make people more educated, more productive, and more participative. The impact of improved education or more information on the poor will be tremendous and large-scale. For the first time in world history we will be truly living in a communication-oriented society. Within next two decades, even remote villages, because of the drastic reduction in communications costs, will be able to be linked up to the global communications network and hopefully this revolution will return power to people since the state will no longer be able to control or curtail communications and the spread of information. This phenomenon has important implications for democracy and education. The expanding network of communication media can now be used by government, institutions, communities, and nongovernment organizations (NGOs), as well as other groups, to address these issues effectively and economically. These potentials have encouraged governments and business communications groups to set up OL systems such as DE institutes, open schools, and open universities, all of which are expanding. In Asia, such systems are increasing. A large number of the Bank's developing member countries (DMCs) have open universities or similar institutions. India has almost a dozen open universities, and a national open school. The Bangladesh Open University, financed by the Bank, has started functioning. PRC, Indonesia, Malaysia, Pakistan, Sri Lanka, and Thailand have already set up open universities. Even smaller countries such as Bhutan, Maldives, and Nepal have initiated some kind of OL system. These initiatives will continue to grow because of expanding modern electronic media, as well as the impact of their cost effectiveness.

14. These are the strategies best suited in terms of reaching large numbers of people with a focus on poverty reduction, human development, women's upliftment, and peaceful development. This can also help in the improvement of quality of information. The information gaps between developed and developing countries, between poor and rich, and between urban and rural are increasing enormously. And these gaps affect not only the economic development of these societies, but also their participation in governance, their health standards; the quality of life; the environment, and the provision of basic goods and services. The information gap is very severe. The poor cannot get the substantive information they need to become aware of their environment, its risks and opportunities. This information gap reduces their ability to solve problems and make decisions. Communication media can enrich DE and OL programs through strengthening three levels of communication: (i) exchange at the institutional and governmental level (including regional cooperation); (ii) meso-level interaction taking place between, for example, chambers of industry/commerce, NGOs, etc.; and (iii) people-to-people contacts on issues of general interest such as environment protection, participation in governance, community participation in the developmental activities. Communication media can also be effectively used in helping to create the necessary environment for cultural education.

IV. DISTANCE EDUCATION AND OPEN LEARNING

15. Modern communications technology, as well as new learning systems, are in the forefront today. Much has been talked about the revolution in communication technology, but two basic features which are more relevant to DE and OL systems: (i) its rapid expansion — presently worldwide INTERNET membership is about 30 million with a monthly increase of about one million; and (ii) the affordability of new communications technology which is becoming cheaper and cheaper so that soon its cost will be negligible. These developments are to the advantage of expanding DE and OL systems. DE employs all of these methods, which basically use instructional technologies and communications media. The philosophy underlying DE is to reach all learners with the same quality of education, in terms of both content and process, that otherwise in the formal system are accessible only to those who can afford them, and who can afford to bear the opportunity costs. DE helps to realize the right of every child to learn with minimal opportunity cost. For life. Not for once, but throughout his or her existence. Through DE we can reach huts, fields, and all parts of isolated villages, which is not possible through the formal schooling system, particularly because of financial constraints as well as human resource constraints. Moreover, providing a school is not providing educational opportunity. The fact is that there are marginal disadvantaged groups that can never make use of these facilities because of the high opportunity cost involved in the formal system. DE is a cost-effective system that allows the learner to continue learning with minimal opportunity cost so that he or she can afford to get an education.

16. The core strength of DE is that it can globalize the education system by bringing in the best available teachers and experts to any corner of the world. They can be mobilized to give us the latest information on the latest trends with the help of communication technology; the learner therefore becomes a global learner. Content can also have global implications. A series of global curricula and syllabi can emerge from this constant exchange of experts with target populations. This will also help in setting the global standards for education across national boundaries. Moreover, the built-in flexibility in the DE system facilitates the localization of the education system to address local needs by way of adjusting the system and its processes to local conditions and local requirements. DE encourages the mobilization and

optimization of the use of local resources (such as teachers, administrators, school buildings, community halls, churches, temples, etc.). In addition, DE is also the individualization of the learning system. The basic concept underlying DE is "the learner learns." This is because learning take place through self-learning materials, thus adjusting to the pace and time of the learner's requirements. Completion can take place in a wide variety of times and periods according to the needs of the student and the household.

17. Modern technology also allows DE to address crucial issues like environmental awareness, peace education, women in development, and access to human rights. It is not limited to one group; it can reach all target groups without destroying its authenticity and quality. Because of these core strengths, this is the best-fit model of education for third world countries, which are facing financial constraints, excessive population growth, poverty, widespread illiteracy, malnutrition, growing violence, and tension between the haves and have nots.

18. The formal system has its own strengths and limitations. The formal system can ensure strong teacher-pupil relationships; academic and administrative control; and quality education according to fixed models, schedules, durations, and methodologies. However, its approach is very costly (particularly in terms of opportunity cost), so that disadvantaged marginal groups are inevitably shoved out of the education mainstream or discouraged from entering the formal system. In some societies, women can hardly take advantage of formal education because of the sociocultural norms that they must observe and comply with. Good teachers are hard to find and even if they are available in the formal system, they are not numerous enough to serve all locations. Therefore, standards become loose and cannot be maintained. Furthermore, the education sector is not attracting bright, qualified, and committed young men and women into the teaching profession. There are many reasons, but mostly they are economic in nature, particularly in terms of compensation and benefits.

19. Under these circumstances, exacerbated by budgetary constraints, the speed of expansion of the formal system will slow down. In addition, since it is enrollment based, and if there are insufficient numbers, governments will not be able to provide education services through the formal system in hilly areas or in small communities and tribal areas. Both the quality and quantity of the education system represent huge risks for the sector. Moreover, the utilization of available facilities remains a hard question to answer. Classrooms are notoriously underutilized.

20. DE can help in addressing these issues in three ways: (i) it can ensure quality education for all, because quality in this mode can be maintained through the quality of learning materials; (ii) the shortage of qualified teachers can be addressed immediately, without much delay in processing or training, because the best teachers in all subjects, through audio-visual (AV) facilities, can be made available to all levels and all kinds of students throughout all locations; and (iii) it can help in optimizing the use of existing resources like school buildings and teachers, using them during holidays or semestral breaks, as well as evenings or after-school hours. The overall impact will be huge budgetary savings, expansion of quality educational services, and maintenance of standards of education.

21. In sum, DE is not just an approach; it is a philosophy that translates media into resources to give the right of learning to every learner during student life, through working life, and into retirement life. DE allows the sharing of teachers, materials, learning approaches, and

teaching methodologies throughout a country and in fact throughout the globe. The possibilities are limitless. For example, one can think of a global curriculum in each discipline for each level. One can stretch this further by developing a core cadre of global teachers by identifying the best available teachers in any country. These people can be recorded, and transmitted by electronic media for immediate dissemination globally, locally, and back to the individual learner working alone or in teams or groups. So the most powerful thinkers can be brought to the very hut of the poor. This can facilitate development of global language and strengthen international understanding. The core messages of peace and development; respect for human rights; mobilization of opinion against violence, armaments, and nonpeaceful activities; saving of the environment; upholding of women's privileges; and thereby making this globe a much safer place to live — can be disseminated everywhere.

V. DISTANCE EDUCATION AND OPEN LEARNING SYSTEMS FOR THE DISADVANTAGED

22. The issues related to primary education, environment, women's upliftment, poverty reduction, population control, and others have become the focal areas of concern for sustainable economic development. These are likewise the primary concerns for Asian developing economies. These issues relate to the attitudes of people and require peoples' participation. When literacy is low, participation rates in schooling are low in general and extremely low for females in rural areas in particular. This negative situation becomes a constraint for these people to participate in addressing the issues that directly affect their own welfare and lives. These include the largest sector of society — the rural poor; marginal groups; and disadvantaged women, children, and aged. We cannot afford the luxury of waiting. If we are to resort to traditional notions of literacy, so much damage will have been done to the potentials of these people.

23. With the help of communication media and computer-aided programs, using DE and OL strategies, these target groups can be immediately serviced — without need to construct huge campuses or to employ full-time teachers. Their minds and skills can be enriched, informed, and given appropriate knowledge to enable them to read, write, do functional calculations, solve problems, and make decisions. It is electronic communication and computer programs, brought via radio/TV systems or programmed AV cassettes in public halls or underutilized classrooms or hospital centers, etc., that can educate, inform, and train the illiterates and bridge the gap of ignorance between the educated and illiterates as well as noneducated, males and females, and rural and urban areas.

24. In view of the fact that modern electronic media are expanding rapidly in Asia, millions of dollars are being invested into developing infrastructure and establishing viewing and listening capacities. Communication is virtually the only area where the individual can optimize an investment in receiving devices such as radio and TV, the prices of which are declining from year to year. As a matter of fact, with the declining price of electronics, even the poorest people in society will to a certain extent have access to TV in many parts of Asia. To bridge the gap, community TV centers and video-TV viewing halls are fast increasing. This will increase the outreach capabilities of TV. Therefore this is an opportune time to strengthen the utilization of existing institutions. Available communication techniques and methods can be justified to mobilize people for participatory development. There is therefore a need to enable the poor and disadvantaged to use the opportunity for information, training, community mobilization and

organization, rural leadership, village-level planning and development, environmental protection and conservation, population education, peace development education, and participatory governance. Along with radio and TV, internet and CD-ROM technology can also be used to disseminate parts of educational information to select target groups, especially for training of people involved in rural development.

25. The number of people, of all ages and socioeconomic types, requiring education and training will always continue to grow. But this will require a large number and variety of quality software and programs to meet the different needs of people. Now it is not just education; these needs could also cover concerns such as poverty reduction, women's upliftment, peace education, human rights, environmental protection, livelihood skills, participatory governance and community mobilization, and NGO operations. Within this context, there is urgent need to train people who can meet these special requirements. At the moment, the quality of practitioners and instructional materials leaves much to be desired. The traditional way of having only technocrats and experts prepare, design, and develop learning programs and materials will have to be changed. It is urgent to involve beneficiaries in the entire process. To achieve this, there is need to change the mind-set and training background of policymakers, planners, and implementors, as well as aid agencies, in this sector. Custom-made facilities/equipment and programs can now be produced to their specific qualifications through the professional sector, thereby optimizing the use of available resources, which are shrinking every year.

VI. ISSUES IN DISTANCE EDUCATION AND OPEN LEARNING SYSTEMS

26. In the last 20 years, DE and OL systems have greatly increased in number in the Asian and Pacific region. However, there are issues that still need to be addressed:

(i) With the advances in communication technology, there is a growing shift towards small facilities and more software. The operations of international broadcast networks like CNN and BBC demonstrate that there is no real need for big physical infrastructure. These networks reach millions of people all over the world with good reportage, entertaining programs, and in-depth documentaries and commentaries. While they have had to set up telecommunications infrastructure, the tendency is towards more investments in software, in programming, in in-depth reporting and investigations, and more educational/scientific/cultural shows. However, when it comes to setting up of DE and OL systems there are always efforts to erect big campuses, which in turn would house huge facilities, huge media centers, and huge staffs. But in these times, and considering the development of electronic media and computer technology, such massive investments may not be worthwhile. More and more, electronics products and services are being miniaturized. The operations from small, well-equipped studios, armed with the latest computer and telecommunications arsenal, can be established, operated, and maintained at the highest quality levels.

(ii) Management capacity, production, and delivery of DE and OL systems remain a problem. The efficiency of these systems (in both economic and educational terms) is less than satisfactory; feedback is inadequate; delivery systems are ineffective; the media mix remains unbalanced; and overall planning, implementation, and control of DE and OL programs and projects need strengthening.

(iii) The quality of materials requires much more attention and creative energy. Though much effort has been expended, the learning materials still do not respond to the expectations and capability levels of learners.

(iv) Programs suffer from being too generalized (in parallel with the formal system) and too universal, and therefore fail to focus their concentration on key critical issues. Programs should be target oriented, i.e., in the present circumstances, they should be targeting the poor, women, and marginal groups. They are still formal in content and process, premised on the granting of degrees and certificates. Target- and issue-oriented programs are the need of the day.

(v) Most DE and OL institutions depend on government subsidies. Resource mobilization is very low because the DE and OL systems generally work only for the education sector. DE and OL systems have failed to exploit opportunities in other sectors like health, social welfare, industry, agriculture, services, food, and energy. If DE and OL systems reach out to these vast other sectors, they can expand their markets and attain self-sustainability over the long run.

(vi) The concept and practice of a lean core staff, supported by professional people on a contractual basis, should be the management practice of DE and OL institutions. The writing, editing, publishing, printing, distribution and collection of materials and programs can be contracted to reduce recurrent budget burdens. Lean staff with specialized skills can improve management, upgrade economies of scale, and allow for tighter controls and at the same time more flexibility.

(vii) To maximize the utilization of available infrastructure should be the basic rule. Existing primary schools, secondary and other schools, as well as hospitals and government training centers in accessible areas — all can be brought under the programs of DE and OL systems through a process of efficient and effective time/schedule allocations and assignments of space and effective coordination. This will increase the utilization of existing facilities.

(viii) Existing systems have not grown and have not provided much importance and support. They are weak in research and development, diminishing the value of quality control and provision of empirical-based policies and programs. Most of the programs are recorded in formal situations or classroom settings. But if these are to be made interesting and marketable to the target groups and communities, they should be recorded and produced in real-life, on-the-ground situations. For example, a lesson on automobile maintenance should be recorded in a car repair shop. Similarly, in management, the setting should be a factory, plantation, or any organization where managers can be seen in action. A lesson's environment, furthermore, should involve the community at the site and not be across a blackboard. This will make the programs much more effective, motivational, and relevant to the lives of the target groups. These new strategies need to be explored.

(ix) Monitoring and evaluation, including feedback systems, are likewise ineffective and not fully developed. Relationships between open universitas and formal institutions like regular universities suffer from lack of day-to-day relationships and effective coordination.

(x) There is lack of private sector involvement. Although the private sector is adopting media in a big way, when we examine DE and OL institutions, private participation is negligible. These usually remain government institutions, subject to bureaucratic red tape. Use of the private sector and NGOs in the production and delivery of software, including programs and materials, is needed. They provide competitive and nontraditional approaches that can build upon the gains of the formal education system and bring new and innovative strategies to meeting the education and training needs of target groups.

(xi) Active involvement of communities, NGOs, and target beneficiaries is needed in the planning, development, implementation, and evaluation of education and human resource development programs. These AV materials are becoming the prime materials for training people in teaching, management, basic services, equipment handling, sports development, training for the handicapped, etc.

(xii) Proper training should be extended to practitioners in this field. There is need for a continuing buildup of a core group that are real experts in the field.

(xiii) There is need for a government agency to standardize norms of quality and performance for programs and delivery systems, and to ensure consistency in the implementation of policies and guidelines. The poor quality of materials in DE and OL systems has contributed to negative reception and a distorted image of them.

(xiv) Setting up of regional mechanisms for cooperation; sharing of resources, materials, and expertise; and collaborative research can help in further reducing costs and in improving the quality of programs and delivery systems.

(xv) Application of "the user-pays" principle should be carefully evaluated for application to select target groups, to ensure self-reliant sustainability of this system over the long run.

VII. THE BANK'S EXPERIENCE

27. The Bank's interest and involvement in DE started in 1985 with the publication of a professional staff paper on the subject, which laid down the groundwork in the area. In 1986, the Bank sponsored a Regional Seminar in Distance Education at the SuKhothai Thammathirat Open University in Thailand, which resulted in a two-volume landmark publication in DE. These documents not only reflected the seminar discussions and conclusions, but also presented a rich reference on the status of the system in the Asian and Pacific region, and made recommendations for further professional development. To this day, they remain the most authoritative reference materials in the region. For global distribution, the publications were included in the Educational Resources Information Center (ERIC) computer system by the U.S. Department of Education, and are available in education-based computer networks all over the world. As a byproduct of this, the Association of Asian Open Universities was established to provide a regional mechanism to all these institutions to share their experience, resources, and creative programs.

28. As a follow-up of this regional seminar, a roundtable conference on distance education was sponsored by the Bank in Islamabad for South Asian Association for Regional

Cooperation (SAARC) countries. This further strengthened Bank's advocacy of DE. In 1992, the Bank approved its first loan for an open university in Bangladesh, which has started functioning. The DE strategy was also supported by the Bank as part of the Education for All program. In many of the Bank's projects, DE is an important component, particularly for teacher training. The Bank is now implementing regional technical assistance for Distance Education for Training of Primary School Teachers. The Bank therefore has taken a leadership role among development agencies in supporting and encouraging DE throughout the region.

29. Looking towards the future, the Bank envisages an information-based environment of education and training accessible to the target groups through information highways and broadcast networks throughout the region. The full potential of developing technology-based national, regional, and international DE courses, has yet to be tapped, but it is now only a matter of resources and skilled insights. Barriers such as language or physical risks are being reduced or torn down by technological advances in computerized programs, by automatic translation and by high-powered broadcast frequencies and the range of transmitter stations and satellite dishes.

VII. CONCLUSION

30. In sum, there is an urgent need to purposefully direct our DE and OL efforts towards the poor, disadvantaged, and marginalized sectors of society. In this modern age, it is most cost-efficient to apply the use of information sciences and communication technology in four key areas: (i) poverty reduction, (ii) human development, (iii) women's upliftment, and (iv) peace development and education. DE and OL systems are the wave of the future, and they can be the arsenals for development, growth, and sustenance of the poor.